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Burrell

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[54] **PORTABLE ELECTRONIC DEVICE FOR
USE IN COMBINATION PORTABLE AND
FIXED MOUNT APPLICATIONS**

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[*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

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[51] **Int. Cl.**⁶ **G06F 1/16; H05K 5/00**

[52] **U.S. Cl.** **361/681; 200/308; 400/88; 361/680**

[58] **Field of Search** **D14/150, 151; 200/308, 314; 364/708.1, 709.15, 710.14; 345/126, 169, 172, 905; 463/37; 361/681-686; 400/88, 493**

[56] **References Cited**

U.S. PATENT DOCUMENTS

D. 301,882	6/1989	Watanabe	.....	D14/140
D. 302,271	7/1989	Watanabe	.....	D14/140
D. 326,450	5/1992	Watanabe	.....	D14/138
D. 337,582	7/1993	Lewo	.....	D14/144
4,120,037	10/1978	Sato	.....	361/681 X
4,237,540	12/1980	Sato	.....	361/681 X
5,133,076	7/1992	Hawkins et al.	.....	364/709.09 X
5,134,390	7/1992	Kishimoto et al.	.....	345/126
5,204,817	4/1993	Yoshida	.....

5,267,181	11/1993	George	.....	364/708.1 X
5,297,051	3/1994	Arakawa et al.	.....
5,416,666	5/1995	Maguire, Jr.	361/681
5,661,632	8/1997	Register	361/683
5,665,000	9/1997	Burrell et al.	463/46

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[57] **ABSTRACT**

A portable electronic device is provided which includes a housing having a front face, a base, and a back wall joined in a polyhedron configuration. The front face includes an input area having keys for data entry and a display area having a screen to illustrate information to the user. The front face, back wall, and base are joined in the polyhedron configuration, such that the front face is presented to the user at an angle to horizontal when the base is mounted upon a horizontal or vertical surface. The front face, back wall, and base are joined at rounded edges to afford a smooth contour which is easily and comfortably grasped within the hand of the user. The portable electronic device further includes a sensor to determine whether the housing is aligned upon a horizontal or vertical axis. This sensor delivers its output to a display control which realigns information displayed upon the view screen to shift the displayed information between vertical and horizontal configurations. The input keys within the input area include indicia identifying the function of each key, wherein the indicia are aligned at an angle with respect to the longitudinal axis of the housing. Such angular alignment of the indicia enable the indicia to be easily viewed when the housing is held within the hand of a user at a vertical alignment or mounted upon a console in a horizontal alignment.

12 Claims, 5 Drawing Sheets

